

Claims

[c1]

What is claimed is:

1. Scribe lines for increasing a utilizable area on a wafer, the wafer comprising a plurality of dies, the scribe lines comprising:
at least a first scribe line arranged in a first direction in a first gap of the dies, the first scribe line having a first width; and
at least a second scribe line arranged in the first direction in a second gap of the dies, the second scribe line having a second width narrower than the first width.

[c2]

2. The scribe lines of claim 1 wherein the first scribe line comprises at least an alignment mark for aligning elements on different dies.

[c3]

3. The scribe lines of claim 1 wherein the first scribe line comprises at least a test key for performing a quality test on the dies.

[c4]

4. The scribe lines of claim 1 wherein the first width is approximately between 100 and 500 micrometers.

[c5]

5. The scribe lines of claim 1 wherein the second width is approximately between 10 and 50 micrometers.

[c6]

6. The scribe lines of claim 1 wherein the second scribe line is provided for dicing the wafer.

[c7]

7. The scribe lines of claim 1 wherein the wafer is scribed by supplying a mechanical stress on the scribe lines.

[c8]

8. The scribe lines of claim 1 wherein the wafer is scribed by performing an etching process on the scribe lines.

[c9]

9. The scribe lines of claim 1 further comprising a plurality of scribe lines arranged in a second direction, the scribe lines arranged in the second direction comprising various scribe line widths.

[c10]

10. The scribe lines of claim 9 wherein the second direction is perpendicular to the first direction.

10063887-052102

- [c11] 11.The scribe lines of claim 1 wherein the dies are in the same shapes and sizes.
- [c12] 12.The scribe lines of claim 1 wherein the dies comprise various die shapes.
- [c13] 13.The scribe lines of claim 1 wherein the dies comprise various die sizes.
- [c14] 14.Scribe lines on a wafer, the wafer comprising a plurality of dies, the scribe lines comprising:
a plurality of first scribe lines positioned in gaps of the dies, each of the first scribe lines comprising a predetermined pattern; and
a plurality of second scribe lines positioned in gaps of the dies, the second scribe lines being narrower than the first scribe lines.
- [c15] 15.The scribe lines of claim 14 wherein the predetermined pattern comprises an alignment mark for aligning elements on different dies.
- [c16] 16.The scribe lines of claim 14 wherein the predetermined pattern comprises a test key for performing a quality test on the dies.
- [c17] 17.The scribe lines of claim 14 wherein the first scribe lines comprise at least an arranging direction.
- [c18] 18.The scribe lines of claim 14 wherein the second scribe lines comprise at least an arranging direction.
- [c19] 19.The scribe lines of claim 14 wherein the dies are in the same shapes and sizes.
- [c20] 20.The scribe lines of claim 14 wherein the dies comprise various die shapes.
- [c21] 21.The scribe lines of claim 1 wherein the dies comprise various die sizes.